Highlights

Overview

This issue of the *Natural Gas Monthly* presents the most recent estimates of natural gas data from the Energy Information Administration (EIA). Estimates at the national level extend through November 1998 for many data series.

Highlights of the data contained in this issue are:

- Over 3 trillion cubic feet of working gas is estimated to be in storage at the end of November 1998. This is the first time since 1992 that this much working gas has been available at the end of the first month of the heating season (November through March).
- Driven by high demand for air conditioning during the summer, the electric utility sector continues to be the only end-use sector with higher natural gas consumption in 1998 compared with 1997.
- Dry natural gas production in 1998 is keeping pace with that of 1997, even though the cumulative average wellhead price through August 1998 is estimated to be 14 percent below that of 1997 for the same period.

Supply

The 1998-99 heating season (November through March) began with an estimated 3,157 billion cubic feet of working gas in underground storage facilities (Table 10). Warmer-than-normal weather during November 1998 led to lower-than-expected demand for natural gas for space heating during the month. Net storage withdrawals during November 1998 are estimated to be only 40 billion cubic feet, 79 percent lower than in November 1997. This lower demand, together with production levels comparable to last year, resulted in more than 3,000 billion cubic feet of working gas remaining in storage at the end of November for the first time since 1992. Working gas at the end of November 1998 is estimated to be 3,117 billion cubic feet (Figure HI2). It was 3,054 billion cubic feet at the end of November 1992 (the 1992-93 heating season began with 3,223 billion cubic feet of working gas in storage).

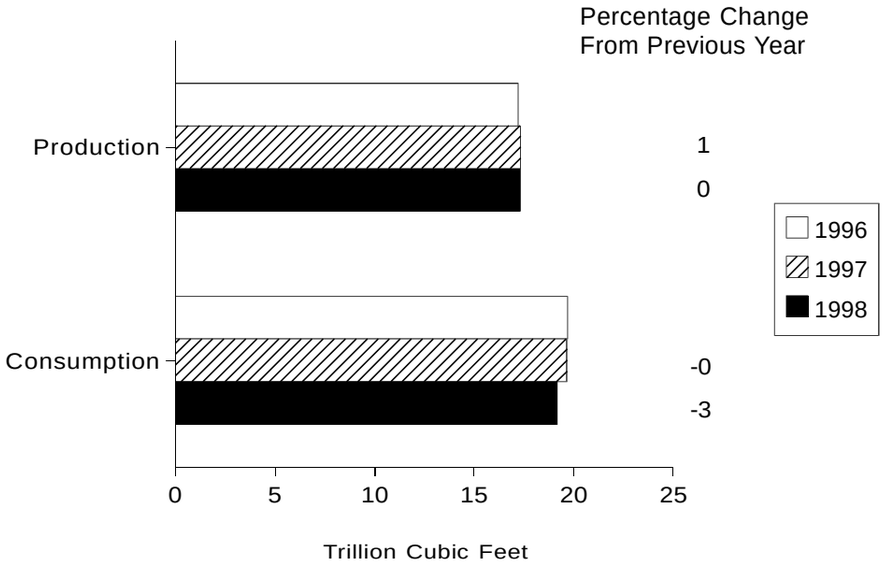
Adjustment of 1997 Monthly Data

This issue of the *Natural Gas Monthly* contains revisions of several of the 1997 monthly data series. These data series have been revised so that their totals for the 12 months of the year agree with the annual totals shown in the *Natural Gas Annual 1997*. The data series that were adjusted to annual totals are: natural gas production, wellhead prices, underground storage injections and withdrawals, consumption by State and sector, and consumer prices by State and sector.

The revisions are the result of an adjustment process that is performed each year when data received from an annual census of respondents become available. Before the process begins, all revisions and corrections which had been received throughout the year are included in the monthly base figures. Then the annual adjustment process aligns the monthly estimates for sectoral consumption, sectoral prices, and underground storage injections and withdrawals, which had been developed using monthly survey information, to agree with the annual summaries of data reported on the Form EIA-176, "Annual Report of Natural and Supplemental Gas Supply and Disposition," and published in the *Natural Gas Annual 1997*. Natural gas production and wellhead prices are also adjusted from previously published estimates using the best information obtained from producing States and the United States Minerals Management Service.

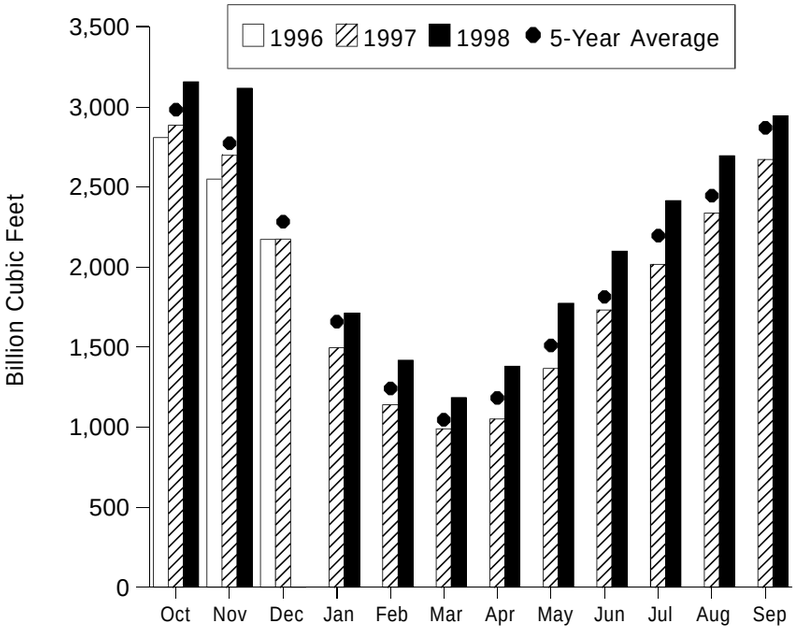
Appendices A (Explanatory Notes), B (Data Sources), and C (Statistical Considerations) of this publication provide further information about data sources, estimation procedures, annual adjustments, and sample design. These appendices may be helpful in evaluating the monthly data.

Figure HI1. Natural Gas Production and Consumption, January-November, 1996-1998



Source: Table 2.

Figure HI2. Working Gas in Underground Storage in the United States, 1996-1998



Note: The 5-year average is calculated using the latest available monthly data. For example, the December average is calculated from December storage levels for 1993 to 1997 while the January average is calculated from January levels for 1994 to 1998. Data are reported as of the end of the month, thus October data represent the beginning of the heating season.

Sources: Form EIA-191, "Underground Natural Gas Storage Report," Form EIA-176, "Annual Report of Natural and Supplemental Gas Supply and Disposition," and Short-Term Integrated Forecasting System.

Cumulatively for January through November 1998, dry natural gas production is estimated to be 17,331 billion cubic feet (Table 1). This level is essentially the same as that for the same period of 1997, and only 0.7 percent higher than in 1996 and 2 percent higher than in 1995 (Figure HI1). Production in November 1998 is estimated to be 1,567 billion cubic feet, or 52.2 billion cubic feet per day, 1.3 percent higher than in November 1997.

During 1998, net imports of natural gas have continued to increase over those of last year. Cumulatively for the first quarter, net imports exceeded those of 1997 by an estimated 2 percent. Through the first half of the year, the 1998 level was estimated to be 3 percent above that of 1997. Through November 1998, net imports are estimated to be 2,720 billion cubic feet, 5 percent higher than last year's level. Net imports during November 1998 are estimated to be 256 billion cubic feet or 8.5 billion cubic feet per day (Table 2). This is just slightly below the daily rate during November 1997.

End-Use Consumption

End-use consumption of natural gas is estimated to be 3 percent lower in 1998 than in 1997 for the January-through-November period. The cumulative level for 1998 is estimated to be 17,386 billion cubic feet (Table 3). Warmer temperatures than last year, especially in January and February as a result of El Nino, and in November, led to reduced demand for natural gas for space heating in 1998. Residential consumption for January through November 1998 is 373 billion cubic feet lower than for the same period of 1997, a decline of 9 percent (Figure HI3). Commercial consumption is down by 123 billion cubic feet, or 4 percent. Industrial consumption of natural gas is also down by 4 percent over the period, but this sector consumes far more natural gas than either the residential or commercial sectors. Thus, the decline in industrial consumption is equivalent to a drop of 283 billion cubic feet.

Monthly estimates of natural gas consumption by electric utilities are available through August 1998. This is the only end-use sector in which natural gas consumption is increasing compared with that of 1997. Cumulatively through August 1998, electric utility consumption is estimated to be 13 percent higher than in the same period of 1997. This rise in consumption is largely driven by increased demand for air conditioning in the Southwest during the summer. Much of the peak electricity generation in this region is gas-fired. By comparison, consumption by the residential, commercial, and industrial sectors through August 1998 is estimated to be 8, 3, and 4 percent lower than in 1997, respectively.

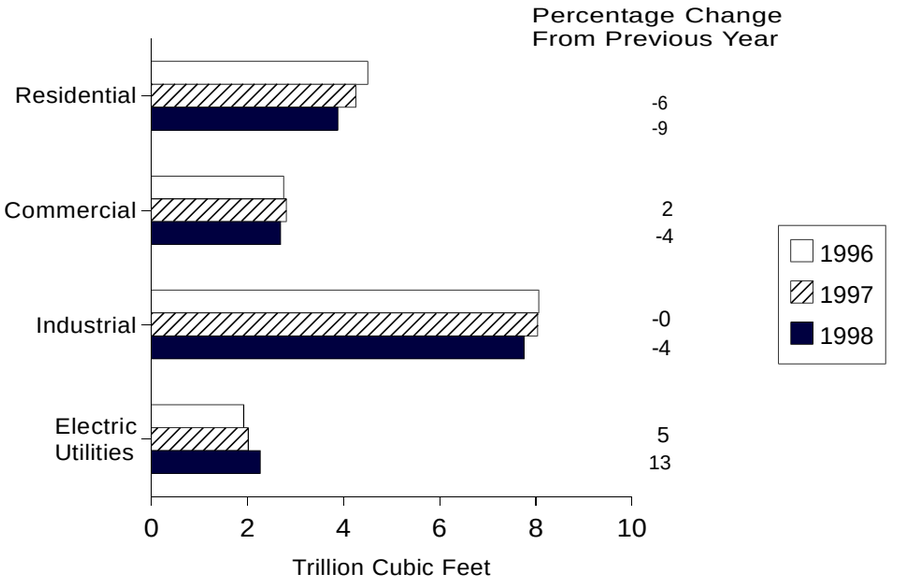
Prices

The national average wellhead price is estimated to be $1.68 per thousand cubic feet for August 1998 (Table 4). This is 19 percent lower than the price in August 1997. Cumulatively for January through August 1998, the wellhead price is estimated to be $1.89 per thousand cubic feet, 14 percent lower than in the same period of 1997. However, prices in early 1997 were much higher than in early 1998, reflecting tighter supply and demand conditions during the winter of 1996-97. If average wellhead prices for 1998 and 1997 are compared for only the March-through-August period, the 1998 average is $1.91 per thousand cubic feet, only 3 percent below the $1.96 average for 1997.

End-use[1] prices for natural gas are also averaging lower in 1998 than in 1997. Cumulatively, for January through August 1998, residential and commercial prices are estimated to be $6.82 and $5.54 per thousand cubic feet, respectively (Figure HI4). These are 1 and 5 percent lower, respectively, than in 1997. The average price paid for natural gas by the industrial sector during the same period is estimated to be $3.23 per thousand cubic feet, 7 percent lower than in 1997. The cumulative average price of natural gas in the electric utility sector, for January through July 1998, is estimated to be $2.50 per thousand cubic feet, 4 percent lower than for the same period in 1997.

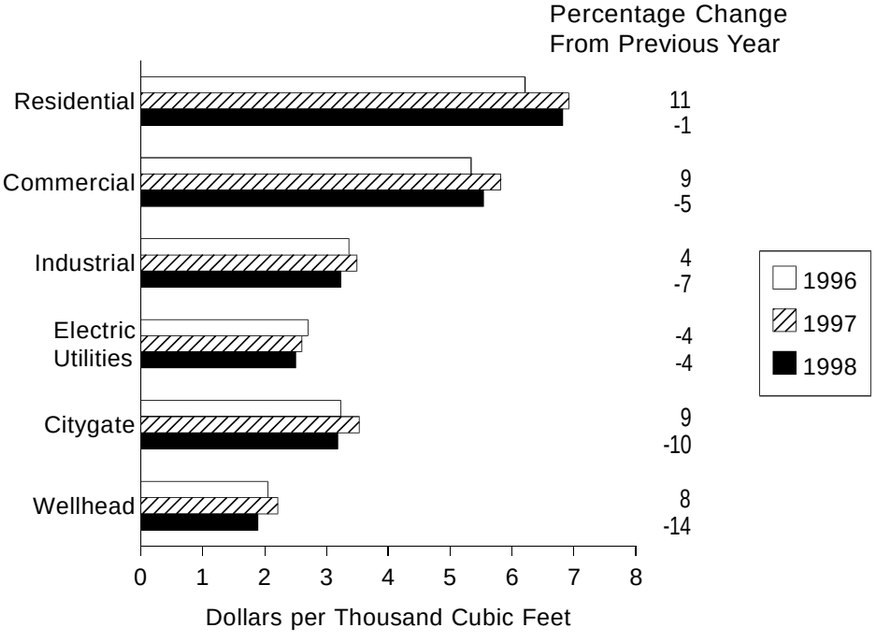
[1]End-use prices in the residential, commercial, and industrial sectors are for onsystem gas sales only. While monthly onsystem sales are nearly 100 percent of residential deliveries, in 1998 they have been from 46 to 72 percent of commercial deliveries and only 13 to 17 percent of industrial deliveries (Table 4).

Figure HI3. Natural Gas Delivered to Consumers, January-November, 1996-1998



Note: The reporting of electric utility deliveries is 3 months behind the reporting of other deliveries.
Source: Table 3.

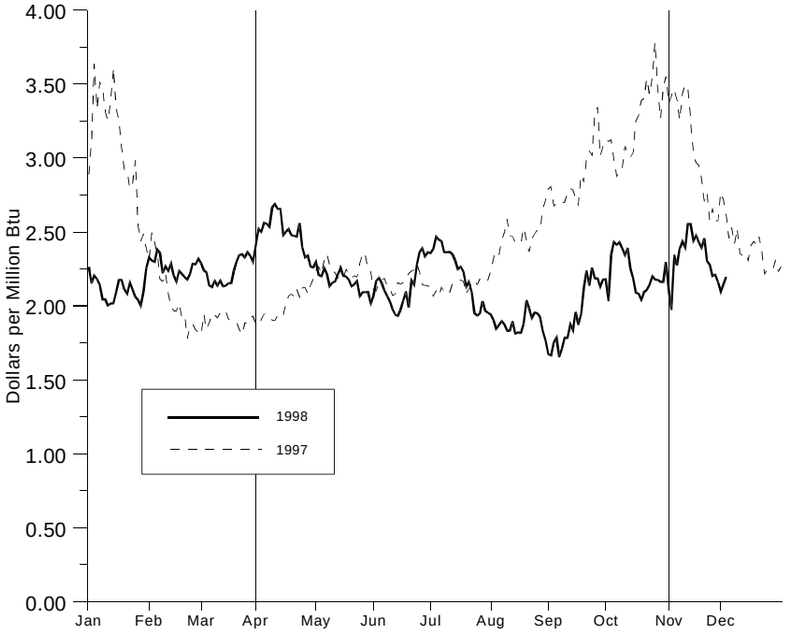
Figure HI4. Average Delivered and Wellhead Natural Gas Prices, January-August 1996-1998



Note: Commercial and industrial average prices reflect onsystem sales only. The reporting of electric utility prices is 1 month behind the reporting of other prices..
Source: Table 4.

More recent data on natural gas futures prices reflect abundant supplies of natural gas and lower-than-expected demand in the early fall of 1998. Warmer-than-normal weather in many parts of the country is mainly responsible for the lower demand. The daily futures settlement price on the nearby month contract (December) at the Henry Hub reached a relative high of $2.553 per million Btu on November 6, 1998, and fell to $2.097 by November 23, before closing out at $2.196 on November 25 (Figure HI5). Futures prices during 1997 followed an unusual pattern of rising in the late summer and early fall, then plummeting in November. Yet, on November 25, 1997, the Henry Hub settlement price was $2.660 per million Btu. The nearby month price in 1996 followed the more usual pattern of rising sharply in the fall and winter. On November 6, 1996, the futures settlement price was $2.684 per million Btu. It rose to $3.494 per million Btu by November 25, 1996, on its way to a high for that winter of $4.573 on December 20, 1996 (for the January contract).

Figure HI5. Daily Futures Settlement Prices at the Henry Hub



Note: The futures price is for the nearby month contract, that is, for the next contract to terminate trading. Contracts are traded on the New York Mercantile Exchange. April 1 is the beginning of the natural gas storage refill season. November 1 is the beginning of the heating season.

Source: Commodity Futures Trading Commission, Division of Economic Analysis.